# TABLE OF CONTENTS

# PLAN/REPORT REVIEW PROCEDURES

## PLAN SUBMITTAL

All plans submitted shall conform to the City of Goodyear Engineering Design Guidelines and other applicable codes, ordinances and agreements. This includes engineering design practices and guidelines as well as plan preparation and presentation. **If any plan submitted is not in compliance or has in the plan reviewer's opinion excessive corrections the review may not continue and shall be returned to the owner. Any plan submitted for review, even if discontinued, shall be counted as a plan review submittal.** Plans and reports shall be submitted directly to the Community Development front desk. All plans and reports shall be accompanied by a completed "Check List for Engineering Plan Review" and City of Goodyear "Engineering Plan Review Fee Schedule." The Final Signature cover sheet, when requested, shall be accompanied by a completed City of Goodyear "Construction Permit Fee Schedule."

All plans and reports to be reviewed shall be sealed by a Civil Engineer registered to practice in the State of Arizona.

Four (4) sets of Water Plans and three (3) sets of Drainage Reports, Grading and Drainage, Sewer, Paving and Storm Drain Plans are required for each submittal. The corresponding number of sets of plans and City redlines are required for all other submittals.

Plan submittal sequence shall be as follows:

- Master Plan (site, drainage, water and sewer plans and others as requested by City of Goodyear). An approved Site Plan/Preliminary Plat shall be included in or submitted with Drainage Report and/or Grading and Drainage Plan.

- Drainage Report[1]
- Grading and Drainage Plan[1]

- Sewer Plan[2]
- Water Plan[2]

- Paving Plan[3] (including striping plan and soils report)
- Storm Drain Plan[3]

Any plan submitted out of sequence shall not be reviewed and shall be returned to the owner to be resubmitted after prerequisite plans and reports have been approved.

[1] May be submitted simultaneously
[2] May be submitted simultaneously
[3] May be submitted simultaneously

Plans shall show only one utility (i.e. water, sewer, storm drain) on the plans at a time, in bold, for review. All other infrastructure, existing and future, shall be shown lighter (smaller pen width or dashed) for reference only. Exceptions to this are:

- Storm drain and paving may be on the same sheet (separate fees apply for each).
- Water and Sewer may be on the same sheet (separate fees apply for each utility).

Plans shall be prepared on a 24" x 36" sheet size, with a minimum 2" left border and a minimum ½" border on all other sides. Plans shall be drawn to the following drawing scales:

Grading and Drainage: horizontal scale of 1 inch = 40 feet
Water, Sewer, Paving and Storm Drain: horizontal scale of 1 inch = 20 feet
Water and Sewer: vertical scale of 1 inch = 4 feet
Paving and Storm Drain: vertical scale of 1 inch = 2 feet

PLAN/REPORT REVIEW TIME AND FEES[1]

| REVIEW | TIME (Working Days)[2] | FEES[3] |
|---|---|---|
| First | 15 | Fees Apply |
| Second | 10 | N/C |
| Third | 10 | Fees Apply |
| Fourth | 10 | Fees Apply |
| Additional Reviews | 10 | Fees Apply |

[1] Developer changes of scope of work shall result in plans being considered a first review. Drainage Report time is the same as for plan review. Drainage Report fees are required for each submittal.
[2] This time frame, to complete review of all plans within the allotted time, is a City goal. Due to the complexity and completeness of plans, review time may take longer.
[3] For appropriate fees see Engineering Plan Review Fee Schedule.

Plans are generally reviewed in the order they are received; at times a reviewer may change this order to meet the above mentioned times at his discretion. All inquiries shall be directed to the Community Development Department at (602) 932-3494.

## REDLINE COMMENTS

All plan review and city redline comments must be corrected or clarified. If there is a discrepancy concerning a redline comment please call the Plan Review staff at (602) 264-6424. The redline set of plans shall be returned with the next plan submittal. Changes made to the plans or report, other than corrections noted in the City's redlines, shall be listed in detail with the location in plans clearly stated. Failure to identify additional changes shall result in return of plans with an additional review required.

## APPROVAL OF PLANS

When in the opinion of the plan reviewer the plans meet the requirements for approval, the original cover sheet will be requested. When submitting the original cover sheet, two (2) full sets of plans and a Construction Permit Fee Schedule shall be submitted for signature. Prior to City of Goodyear signature all other reviewing agencies shall have signed the cover sheet. If an agency does not sign the cover, a letter of their approval shall accompany the cover sheet and the letter date and signing party noted on the cover sheet.

# REQUEST FOR RETENTION WAIVER REVIEW FORM

(To be completed by applicant and submitted with six (6) copies of preliminary drainage report to the City for review.)

**Project information**

Project Name: _____

Project Location: _____

Applicant Name: _____

Applicant Mailing Address: _____

_____

Applicant Phone Number: (____) _____

**Waiver intent**

A waiver is an intentional relinquishment of a claim or right. Before the City can waive its right to require the developer to provide some or all of the required stormwater retention they must be provided sufficient data and reasons for waiving their standard.

**If a waiver is granted:**

1. All onsite storage requirements are not automatically eliminated. If the project can drain directly into an existing regional drainage system designed and constructed to contain or convey the additional runoff, storage requirements may be waived. If not, the development must store the runoff volume necessary to maintain the integrity of the drainage system.

2. Authorization is not granted by the City for the developer to increase runoff or change drainage characteristics to the detriment of any other property owner.

3. The developer is not relieved of liability if the development causes increased drainage problems or flooding on any other property.

**Waiver Criteria**

The following criteria checked below apply to this project:

_____ 1. **The runoff has been included in a storage facility at another location.**
The runoff from this site must be safely conveyed to the other location through an adequately designed facility.

_____ 2. **Application is for a building permit to construct a single family residential structure in a planned development where finish floor and drainage report has been approved.**
The development cannot increase the potential for flood damage to neighboring or downstream properties.

_____ 3. **Application is for a building permit to construct a commercial structure on a pad where finish floor and drainage report has been approved.**
The development cannot increase the potential for flood damage to neighboring or downstream properties.

_____ 4. **Development is adjacent to a natural watercourse or channel that has the capacity to handle the additional runoff flow without increasing the potential for flood damage to any other downstream property.**
The developer must provide engineering analyses to City staff that demonstrates that the watercourse does have the additional capacity and the potential for flooding downstream properties will not be increased.

_____ 5. **Development is adjacent to a man made drainage system that has been designed and constructed to handle the additional runoff flow without increasing the potential for flood damage to any other downstream property or over burdening the system.**
The developer must provide engineering analyses to City staff that demonstrates that the drainage system does have the additional capacity and the potential for flooding downstream properties will not be increased.

I _____ certify that
DEVELOPER, OWNER, or ENGINEER DATE

the above listed project meets the criteria checked above.

# RETENTION WAIVER REVIEW FORM

(For City completion and return to applicant)

**Waiver Status**

_____ Waiver denied, no wavier criteria met.

_____ Waiver denied, insufficient data provided.

_____ Waiver denied, for the following reason(s):

_____

_____

_____

_____

_____ Waiver Granted. Explanation:

_____

_____

_____

_____

_____

**Conditions of Waiver**

_____ All retention requirements are waived

_____ _____ C.F. to be retained onsite.

_____ Detention required _____ CFS maximum allowed to discharge at _____ location.

_____ Other: (specify) _____

_____

_____

_____ Other: (specify) _____

_____

_____

Above recommended By:

_____

_____

Plan Review Staff Date

Recommendation Approved/Denied

| Approved | Denied | | Approved | Denied | |
|---|---|---|---|---|---|
| _____ | _____ | City Manger | _____ | _____ | Comm. Dev. Dir. |
| _____ | _____ | City Engineer | _____ | _____ | P.W. Dir. |
| _____ | _____ | Police Chief | _____ | _____ | Econ. Dev. Dir. |
| _____ | _____ | Fire Chief | _____ | _____ | Sr. Planner |

## MASTER DRAINAGE PLAN CHECK LIST

This checklist is to assist in submitting a complete and successful Master Drainage Plan to the City of Goodyear. The following items on this list are required with your submittal

Master Plan#_____-_____Title_____

## PART I - GENERAL REQUIREMENTS

1. Master Drainage Plan Check List (this list).
2. Master Plan Review Fee $1,200 + $1.00/acre _____
3. Six (6) copies of the approved Master Drainage Plan Report. All six (6) copies shall be submitted to initiate the review process.

## PART II - REQUIRED PLANS AND RELATED DATA

Each Master Drainage Plan Report submittal shall include the following items:

DESCRIPTION OF PROJECT

1. Project Name.
2. Location.
3. Description of the type and scope of project.
4. Size.
5. Vicinity Map.

DESCRIPTION OF ON-SITE DRAINAGE CHARACTERISTICS

1. Topographic Map, appropriate scale that enables clarity and legibility, 10 foot contour interval, 24" x 36".
2. Show key concentration points with $Q_{100}$ year peak discharges.
3. Show watershed boundaries.
4. Show floodplain boundaries for all washes where $Q_{100}$ year is 100 cfs or greater.
5. Describe existing onsite drainage characteristics.

## DESCRIPTION OF OFF-SITE WATERSHED CONDITIONS

1. Show drainage concentration points entering and leaving the project site.
2. Describe drainage conditions and characteristics and any future planned projects.
3. Describe relation to existing Master Plans and adjacent drainage plans. Provide all applicable excerpts when referencing other sources.

## PROPOSED MASTER DRAINAGE PLAN

1. Proposed on-site drainage plan: Appropriate scale that enables clarity and legibility, ten foot contour intervals, 24" x 36".
2. Site development plan 24" x 36".
3. Show peak discharge values $Q_{100}$ year at key concentration points.
4. Show and describe major drainage structures or special drainage facilities needed.
5. Describe proposed drainage system and components, including design criteria and probable effect on the existing upstream and downstream drainage system.
6. Describe stormwater requirements, volume required, volume provided, and location.

## DATA ANALYSIS METHODS

1. Describe hydrologic procedures and assumptions.
2. Describe hydraulic procedures, and assumptions.
3. Describe stormwater storage calculation methods and assumptions.

## DATA AND CALCULATIONS

1. Peak flow calculations (data records or HEC-1 printouts).
2. Channel design calculations.
3. Culvert design calculations.
4. Floodplain calculations (Manning's or HEC-2 printouts).
5. Storage volume calculations.
6. Retention/detention basin inflow-outflow analysis and design calculations.

## PART III - MASTER DRAINAGE PLAN REPORT FORMAT

The following chapters should include the data and exhibits listed above in Part II.

1. Project Description.
2. On-site Drainage Characteristics.
3. Off-site Watershed Conditions
4. Proposed Master Drainage Plan
5. Project Phasing Plan.
6. Data and Calculations (Appendixes).

## GENERAL OUTLINE CHECKLIST FOR DRAINAGE REPORTS

Title: Preliminary or Final Drainage Report

A. Introduction

1. Project Name
2. Size
3. Location
4. Exhibit: Vicinity Map

B. Objectives

1. Describe the type of report and purpose: Preliminary or Final Drainage Plan.

C. Description of Drainage Characteristics

1. On-Site Property

   a. Existing drainage network, patterns, and watershed and floodplain boundaries.

2. Off-site Watersheds

   a. Existing conditions and characteristics

   b. Future planned conditions if different from existing

3. Off-site drainage network entering and leaving the project site.

4. Relation to existing Master Plans and adjacent drainage plans above and below the project. Provide all applicable excerpts when referencing other sources.

5. Classification by the FIRM maps.

6. Exhibits

   a. Off-site Watershed Map

   b. Existing On-site Drainage Map including Mapped 100 year Floodplains and retention basins.

D. Proposed Drainage Plan

1. General description of proposed drainage system and components, including design criteria and probable effect on the existing upstream and downstream drainage system.

2. Pre and post offsite runoff characteristics at key concentration points.

3. Stormwater storage requirements, volume required, volume provided, and location.

4. Major drainage structures or special drainage facilities needed.

5. Describe basis for setting elevations.

6. Exhibits: Proposed On-site Drainage Plan:

   a. Scale appropriate to type of drainage report and size of the project

7. Tables: Development Peak Flows and Retention Volumes.

E. Data Analysis Methods

1. Hydrologic procedures and assumptions

2. Hydraulic procedures, methods, and assumptions.

3. Stormwater storage calculation methods and assumptions

F. Summary and Recommendations

G. References or Bibliography

H. Appendix

1. Data and Calculations (as applicable)
   a. Peak Flow Calculations
   b. Channel Design Calculations
   c. Culvert Design Calculations
   d. Floodplain Calculations
   e. Storage Volume Calculations

f. Retention/Detention Basin Analysis and Design Calculations.

g. Street Capacity Calculations

h. Curb Opening, Catch Basin Calculations

i. Storm Drain Calculations

j. Special Problem Calculations

k. Sediment and Scour Calculations

2. Where applicable these additional sections may be required:

a. Finished Floor Elevations

(1) In relation to designated floodplains

(2) In relation to natural ground elevation if not in floodplain

b. Special Interim Measure

c. Construction Phasing

d. Erosion/Sediment Control Plan

e. COE 404 Permit if filling or cutting below normal high water mark.

## GRADING AND DRAINAGE PLANS REVIEW CHECKLIST

PROJECT: _____ DATE: _____

CK'D BY: _____ REVIEW NO.: _____

**Cover Sheet:**

1. Sheet size (24" x 36")
2. Benchmark described
3. Grade & drain notes
4. Approval block...title...legend
5. Vicinity Map
6. Sheet and index map
7. Seal and signature of RCE
8. Earthwork quantities list
9. Subdivider's name...address...phone
10. Professional's name...address...phone

**Reports:**

1. Drainage report
2. Perculation Report

**Design:**

1. Scale...north arrow each sheet
2. All lots shown in entirety

**Existing:**

1. Contours/spot elevs...drainage arrows
2. Ditches...swales...canals...Drainage ways
3. Retention/Detention
4. Bldgs/structures (removal/backfill/compaction)
5. Streets/alleys... curb...gutter...sw...pavement elevations

**Proposed:**

1. Elevs at front/rear lot corners
2. Finished pad/first floor elevs (14" above lot outfall)
3. Lot drainage to streets (no ponding on lots?)
4. Minimum lot slope is 1.0%
5. First floor elev >100 yr storm elev
6. Grades at front lot corners - final street grades
7. Special grading details
8. Alley elevations/grades
9. Storm drain system shown in entirety (when used)
10. Low flow pipes at retention basins
11. Scuppers
12. Runoff from 100 yr. storm retained on site plus 1/2 of street
13. Appropriate storm runoff retained between curbs
14. No inverted crowns
15. Depressed lots...18" curb depressions at 50'
16. Existing major water courses...maintained with easements

**STREET PLANS REVIEW CHECKLIST**

PROJECT: DATE:

CK'D BY: REVIEW NO.:

**Cover Sheet:**

1. Sheet size (24" x 36")
2. Benchmark described
3. Paving notes
4. Approval block...title...legend
5. Vicinity Map
6. Sheet and index map
7. Seal and signature of RCE
8. Quantities list
9. Subdivider's name...address...phone
10. Professional's name...address...phone

**Reports:**

1. Soils report
2. Traffic impact report.

**Design:**

1. Typical street Sections
2. Pavement cuts
3. Grades in profile...Street centerline...curbs...gutters
4. Maximum...Collector 7%
   ...local 15% (>12%>600')
   Minimum w/gutters 0.15%...des 0.40%
   Minimum w/o gutters 0.35%
   Vert curves...collector and local
   minimum length 100'
5. Scale...north arrows each sheet
6. Utilities (plan/profile)
7. Adjustments...manholes...meters...valves
8. Ties to existing streets...pavement...curb...gutter...sw's (plan/profile)
9. Pavement...curb...gutter...sw's in plan view
10. Back of curb radii:
    Local–local 20'
    Any–arterial 25'
    Art–arterial 30'
11. Dimensions cl to face of curb (½ street 24', 2 lanes)
12. Sidewalk widths...ramps...both sides of street crosswalks...conc walks through blocks
13. R/W dimensioned
14. Standard detail no's called out
15. Street signs...name (at all int)...traffic
16. Survey monuments at corners, angle points, poc, st int, conservation easements, iron pipes or iron bars at lot corners, angle points, poc's
17. Match lines with stationing
18. Curb...cl grades match adjacent sheets
19. Curve data with stationing
20. Curb transitions
    Vert curb along coll...schools...parks...mar access
    Roads on major street side
21. Special details
22. Street full frontage of lots
23. Dead ends (temp turnarounds 50' radius if >200' long)
24. Pavement taper...delineators
25. Valley gutters (where water crosses asphalt
26. Elevations each end of valley gutters
27. Cul-de-sac r/w (50' radius, 3' pue)
28. Alley width (16' sf both sides, 20' mf, c, i, 12' ½)
29. Alley intersections (triangle cutoff 15')
30. No dead end alleys
31. If 10 deg > tan cl deflect < 90 deg, then curve:
    Min radius 500' coll...100' loc
32. Reverse curve tan 100' loc
33. Intersections w/ coll 90 deg...w/loc 15 deg off
34. Jogs 125' loc, 400' coll
35. Intersect tan, loc to coll 150' (if loc curve < 400')
36. T-type intersections
37. Intersection corners:
    Loc to loc, circ w/12' radius at pl
    Coll to coll, 14' x 11' trianlge
38. Art intersections at mid & ¼ sec only
39. Marginal access opening on loc at art (30' from art pave)
40. Alleys for primary vehicular...paved
41. Street light locations (int, 200' spacing)
42. Walls along major streets (when lots back up to continuous undulating or offset dec masonry on landscape or vehicular non-access easements)
43. Landscaping & watering in r/w or on pue's

## WATER PLANS REVIEW CHECKLIST

PROJECT: _____ DATE: _____

CK'D BY: _____ REVIEW NO.: _____

**Cover Sheet:**

1. Sheet size (24" x 36")
2. Benchmark described
3. Water notes
4. Approval block...title...legend
5. Vicinity Map
6. Sheet and index map
7. Seal and signature of RCE
8. Quantities list
9. Subdivider's name...address...phone
10. Professional's name...address...phone
11. County health department approval block
12. In county/state jurisdiction (permit required)
13. Layout agree with preliminary plat

**Design:**

1. Crossings with pipes...utilities
2. Existing/proposed utilities shown (sewer mandatory)
3. Dipped water lines shown in profile...typ. section
4. Lines in standard locations
5. Scale...north arrow on each sheet
6. Tap to each lot...stationed from sta.. Center Line 6' from sewer
7. Cul-de-sacs have caps and corp stop w/stationing
8. Pavement cuts
9. Compaction types called out
10. Encasement
11. Cover (3' > 10">4')
12. Fire hydrants dimension from sta. Center Line, spacing per 5.1.1 B)5.
13. Easements
14. Valve spacing...dimension form sta. Center Line (700' residence 500' commercial)
15. Water lines dimension from sta. Center Line
16. Valve boxes
17. Special details
18. Line size

SEWER PLANS REVIEW CHECKLIST

PROJECT: _____ DATE: _____

CK'D BY: _____ REVIEW NO.: _____

**Cover Sheet:**

1. Sheet size (24" x 36")
2. Benchmark described
3. Sewer notes
4. Approval block...title...legend
5. Vicinity Map
6. Sheet and index map
7. Seal and signature of RCE
8. Quantities list
9. Subdivider's name...address...phone
10. Professional's name...address...phone
11. County health department approval block
12. In county/state jurisdiction (permit required)
13. Layout agree with preliminary plat

**Design:**

1. Bedding details (Class B > 10' depth)
2. Existing proposed utilities shown
3. Crossings of pipes/utilities shown in profile
4. Sewers in standard locations
5. Line size
6. Minimum velocity (2 fps)
7. Can sewer system be extended to serve adjacent property?
8. Maximum grade < 9fps
9. Cover
10. Manhole lids (24")...30" for >10' depth, in, lines >18")
11. Grade lines shown in profile
12. Scale...north arrow on each sheet
13. Manhole rim elevations
14. Distances M.H. to M.H....M.H. to C.O.
15. Spacing (400' < 12"...500' > 18")
16. Tap to each lot...6' min. from water tap
17. Encasement
18. Grade/alignment changes occur within M.H.
19. Matchlines in plan/profile
20. Pavement cuts.
21. Invert elevations
22. Standard details for M.H.'s
23. M.H.'s stationed
24. M.H.'s tied to sta .Center Line
25. Detail for service taps into M.H.
26. Easements
27. Taps for commercial/industrial
28. Inspection M.H.'s for industrial taps
29. Abandoned taps capped

CITY OF GOODYEAR

# COMMUNITY DEVELOPMENT DEPARTMENT
# PROCEDURE FOR THE REVIEW AND INSPECTION
# OF RETAINING WALLS

June 7, 2000

Purpose: To define the plan review and inspection process by the Engineering Division and the Building Safety Division.

- A standard grading and drainage plan will be submitted to the Community Development Department for Engineering review. Grading and drainage plans will typically be required for the following projects:
  - Subdivisions
  - Commercial and Industrial Projects
  - Custom Residential Lots where a mass grading plan was not submitted with the subdivision improvement plans, e.g., Custom Lots in Estrella Mountain Ranch

- The Engineering Division will conduct a standard grading plan review and will also check for any proposed retaining walls. The design shall provide sufficient detail so that the Engineering Division can determine the height of any proposed retaining wall(s) from the bottom of the footing to the top of the retaining wall(s). The design shall also indicate whether the wall is subject to any surcharge loading. Any retaining walls that are four feet or less from the top of the embankment to the bottom of the footing and that are not subject to any surcharges will be reviewed for conformance with accepted grading practices. If any retaining wall, or substantial portion thereof, is discovered to be over four feet high or that is subject to any surcharge regardless of height, the Engineer review will note on the plans that a separate Building Permit will be required for the wall. The Engineer review will also require that the applicant note this requirement on the final "Approved" plans.

  (**Note:** If a fence is built on top of a retaining wall, the heights of the fence and the wall will be considered separately, e.g., a six foot fence on a three foot retaining wall will not be considered a nine foot fence or a nine foot retaining wall.)

- Upon approval of the grading plan, the contractor shall obtain a grading permit from the Community Development Department. The Engineering Inspector will conduct all grading inspections and determine that all retaining walls are in the proper location(s) as per the "Approved" plans. The Engineering Inspector will not conduct formal structural inspections of the retaining walls. If it is discovered that a retaining wall is over four feet in height, the inspector will notify Building Safety of the situation and will also notify the contractor that he is to contact Building Safety for permit requirements. The inspector will not sign off on the grading until a retaining wall permit is obtained from Building Safety. It is important that the Engineering Inspector and the Building Inspector assigned to the project keep in contact with each other and discuss any other noted discrepancies.

- If a separate permit is required from Building Safety, proper documents shall be submitted for review. Once the permit is issued, all standard inspection processes will be followed.

- Any "gray" areas that occur will be discussed and resolved by the City Engineer and Chief Building Official.

Recommended for approval by:

Steve Burger, Chief Building Official

David Ramirez, City Engineer